



## Apurba Manna

M.Tech. Applied Mathematics and Scientific Computing  
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### Area of Interest

AI, ML, NLP, Cloud Services, DBMS, Generative AI, LLMs.

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### Education

Year	Degree/Examination	Institution/Board	CGPA/ Percentage
2025	M.Tech	Indian Institute of Technology, Roorkee	8.650
2021	Postgraduate (PG)	Vidyasagar University	8.650
2019	Graduate (UG)	Vidyasagar University	59.12 %

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### Experience

#### Product Engineer | AI CERTs

Sep 2025 - Present

- Developing an **Autonomous Content Agent System (MVP)** — a multi-agent automation pipeline for content ideation, competitive gap analysis, and repurposing, leveraging **OpenAI Agents SDK** and **modular orchestration** with Python.
- Building an **Autonomous Competitor Monitoring System** to track competitor LinkedIn updates (via **Apify**) and website changes, generating **daily AI-driven alerts and summaries** for marketing intelligence.
- Working on **end-to-end automation workflows** for marketing content research and generation, integrating **data scraping**, **LLM-based analysis**, and **multi-agent coordination** for operational efficiency.

#### AI ML Engineer | mTouch Labs

June 2025 - Sep 2025

- Worked on **voice-based food ordering agent** using **Google STT**, **OpenAI LLMs** for decision-making, and **ElevenLabs TTS**, integrated with **Twilio** for real-time phone call handling and **natural voice interruption detection** using voice heat.
- Built an **RAG-based document understanding platform** leveraging the Unstructured library, recursive text chunking, and PostgreSQL to extract and retrieve structured and visual data from documents.
- Designed a **multi-agent system** using **LangGraph** to interpret user queries, interact with MySQL databases, and automate complex conversational workflows with context and memory retention.

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### Internships

#### AI/ML Intern | mTouch Labs

March 2025 - June 2025

- Developing a **real-time AI voice assistant** using **NVIDIA Riva (ASR/TTS)** and **Llama 3 (Groq)** for advanced **natural language** understanding, integrated with **Exotel** for telephony-based conversations.
- Implementing **low-latency conversational pipeline** with **real-time interruption** handling to enable intelligent, human-like interactions for virtual receptionist and customer support use cases.
- Building a **LangGraph-based** ride booking assistant, enabling context-aware, multi-turn task flows for booking management with **stateful dialogue handling**.

#### AI Intern | AI Chef Master

August 2024 - November 2024

- Developed a recommendation system** that improved food ingredient suggestions by **25%** using **collaborative** and **content-based** filtering and integrated a **user-friendly GUI** with **Streamlit** on the website.
- Engineered an **AI chatbot** using **LlamaIndex** and **Hugging Face** models, capable of retrieving answers from documents via semantic search, with **Mistral-7B-Instruct** for enhanced response accuracy.

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### Projects

#### Stock Sentiment Analysis Using Machine Learning Techniques | Finance Club, IIT Roorkee

May 2024 - June 2024

- Performed sentiment analysis on 10+ million financial news articles from sources like Financial Times and BBC using web scraping and APIs, achieving 80% classification accuracy with Random Forest.
- Implemented LSTM for stock price forecasting, achieving a low RMSE of 0.03, enabling identification of optimal buy/sell points to support investment strategies.

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### Awards / Scholarships / Academic Achievements

- Winner in the event Express to Inspire held on Sep. 27, 2023, by Wellness Centre, IIT Roorkee
- Graduate Aptitude Test in Engineering (GATE) 2023 with AIR 309

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### Skills

Computer languages Python, MySQL  
Software Packages Power BI, Tableau, Jupyter, Google Colab  
Languages Known English, Bengali, Hindi

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### Positions of Responsibility & Extra Curriculars

#### Artist | Bangiya Sangeet Parishad

December 2014 - February 2018

- Placed in first division with distinction in theory and practical and is awarded 5th year "Ankan Bivakar".